

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-30. (Cancelled)

31. (Currently Amended) A baseball bat comprising:

- a handle portion for gripping, said handle portion having a handle length;
- a cylindrical tubular hollow void barrel portion for striking, said barrel portion having a barrel length; and

- a tapered mid-section portion connecting said handle portion and said barrel portion;

- said handle, barrel and mid-section portions constructed solely of a polymer composite material,

- said polymer composite material comprising a thermoset resin and continuous length reinforcement fibers,

- wherein said continuous length reinforcement fibers in said handle portion have a handle fiber length and said continuous length reinforcement fibers in said barrel portion have a barrel fiber length, and wherein said handle fiber length is greater than said handle length and said barrel fiber length is greater than said barrel length, said continuous length reinforcement fibers being arranged at a resultant fiber angle relative to a central longitudinal axis of the bat, wherein an average of the absolute values of all said resultant fiber angles in said handle portion is less than an average of the absolute values of all said resultant fiber angles in said barrel portion, thereby providing said handle portion with an axial stiffness that is greater than the axial stiffness of said barrel portion, and

- wherein the axial bending stiffness of the handle portion is between 50,000 [lb/in²] lb-in² and 250,000 [lb/in²] lb-in², and the radial compression stiffness of said barrel portion is between [70,000 lb/in² and 350,000 lb/in²] 70 lb/in and 350 lb/in.

32. (Original) The baseball bat of claim 31, wherein said average of the absolute values of all of said resultant fiber angles in said handle portion is between 5° and 30° less than

said average of the absolute values of all of said resultant fiber angles in said barrel portion.

33. (Original) The baseball bat of claim 31, wherein said average of the absolute values of all of said resultant fiber angles in said handle portion is less than 20° and said average of the absolute values of all of said resultant fiber angles in said barrel portion is greater than 25°.

34. (Cancelled)

35. (Original) A baseball bat comprising:

- a handle portion for gripping, said handle portion having a handle length;
- a cylindrical tubular hollow void barrel portion for striking, said barrel portion having a barrel length; and

- a tapered mid-section portion connecting said handle portion and said barrel portion;

- said handle, barrel and mid-section portions constructed solely of a polymer composite material,

- said polymer composite material comprising a thermoset resin and continuous length reinforcement fibers,

- wherein said continuous length reinforcement fibers in said handle portion have a handle fiber length and said continuous length reinforcement fibers in said barrel portion have a barrel fiber length, and wherein said handle fiber length is greater than said handle length and said barrel fiber length is greater than said barrel length,

- said continuous length reinforcement fibers being arranged at a resultant fiber angle relative to a central longitudinal axis of the bat, wherein an average of the absolute values of all said resultant fiber angles in said handle portion is less than an average of the absolute values of all said resultant fiber angles in said barrel portion, thereby providing said handle portion with an axial stiffness that is greater than the axial stiffness of said barrel portion, and

wherein the first bending mode frequency of the handle portion is between 100 and 600 hertz, and the hoop frequency of said barrel portion is between 800 and 2000 hertz.

36. (Original) The baseball bat of claim 35, wherein said average of the absolute values of all of said resultant fiber angles in said handle portion is between 5° and 30° less than said average of the absolute values of all of said resultant fiber angles in said barrel portion.
37. (Original) The baseball bat of claim 35, wherein said average of the absolute values of all of said resultant fiber angles in said handle portion is less than 20° and said average of the absolute values of all of said resultant fiber angles in said barrel portion is greater than 25°.
38. (Cancelled)